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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,279	02/02/2004	Pietro Arturo Bernasconi	Bernasconi 6-4 (LCNT/1262)	2208
46363	7590	09/23/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN, LLP/ LUCENT TECHNOLOGIES, INC 595 SHREWSBURY AVENUE SHREWSBURY, NJ 07702			WONG, TINA MEI SENG	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 09/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/770,279		BERNASCONI ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Tina M. Wong		2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This Office action is responsive to applicant's communication submitted on 10 August 2005. The Examiner notes correction of the minor informalities.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al.

In regards to claims 1, 3, 7, 9, 10, 11, 13 and 14, Dingel et al discloses polarization beam splitter (330) coupled to an arrayed waveguide grating, AWG, (Figure 6), where the AWG includes a star input coupler (20), a star output coupler (60) and a plurality of waveguides of unequal lengths. Dingel et al further discloses the input signal to be split by the AWG. (Column 5 Lines 55-65) But Dingel et al fails to specifically disclose the input signal to arrive at different phase fronts of a free space region at the output side of the AWG, where the AWG splits the first and second polarization components. However, Dingel et al disclose a polarization beam splitter to split the optical signal into different branches based on polarization. Therefore, although Dingel et al does not explicitly state splitting the optical signal into different polarization components, it would have been obvious at the time the invention was made to a person having ordinary skill in the art since Dingel et al does disclose a polarization beam splitter equip with the function to split an input optical signal into different breaches based on polarization.

In regards to claims 4 and 5, Dingel et al discloses an input coupler to comprise of a star coupler. But Dingel et al fails to disclose the input coupler to comprise of a slab waveguide lens. However, Dingel et al does disclose the input coupler to be a slab coupler. Furthermore, Applicant states slab waveguide lenses have substantially similar functions as a star coupler and therefore can be used in place of star couplers. (Specification, Page 4 Line 32- Page 5 Line 2) Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have used either a star coupler or slab waveguide lenses since Applicant states they perform the substantially the same function.

In regards to claim 6, Dingel et al discloses the apparatus to perform at least one of the wavelength multiplexing or demultiplexing for input signals.

Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claims 1 and 10 above, and further in view of U.S. Patent 6,853,769 to McGreer.

In regards to claims 2 and 12, Dingel et al fails to explicitly disclose the polarization components to comprise a TE mode and a TM mode. However, McGreer discloses the TE and TM polarization modes to be two principle modes. The TE and TM modes commonly exist within a signal when separating the modes by a polarization splitter. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for a signal having polarization components to have a TE mode and a TM mode.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,597,841 to Dingel et al as applied to claim 1 above, and further in view of U.S. Patent 5,838,870 to Soref.

Art Unit: 2874

In regards to claim 8, Dingel et al fails to disclose the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure. However, Soref discloses splitting waveguide signals where the waveguides are formed by etching and being placed in MQW layers. Therefore, since Dingel et al simply discloses a general polarization splitter and Soref discloses the details of the polarization splitter with waveguides, it would have been obvious at the time the invention was made to a person having ordinary skill in the art for the polarization splitter to be fabricated from waveguides with a shallow etched buried rib structure and a thin film MQW on top of the rib structure.

### ***Response to Arguments***

Applicant's arguments filed 10 August 2005 have been fully considered but they are not persuasive.

Applicant argues Dingel et al does not teach or suggest active/passive monolithic integration techniques. However, the independent claim is an apparatus claim and not a method claim. The limitation argued by Applicant is a method limitation. An apparatus claim must be structurally distinguishable from the prior art. The patent being sought in the preceding claims is an end product that is met by the previously applied reference.

Applicant also argues Dingel et al does not teach or suggest a polarization splitter is *adapted for* being integrated with active devices and passive devices. However, it has been held that the recitation that an element is *adapted* to perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

*In re Hutchison, 69 USPQ 138*

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

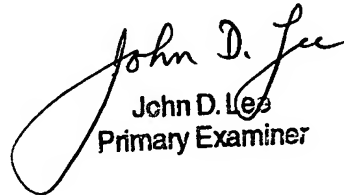
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tina M. Wong whose telephone number is (571) 272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2874

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
TMW

  
John D. Lee  
Primary Examiner